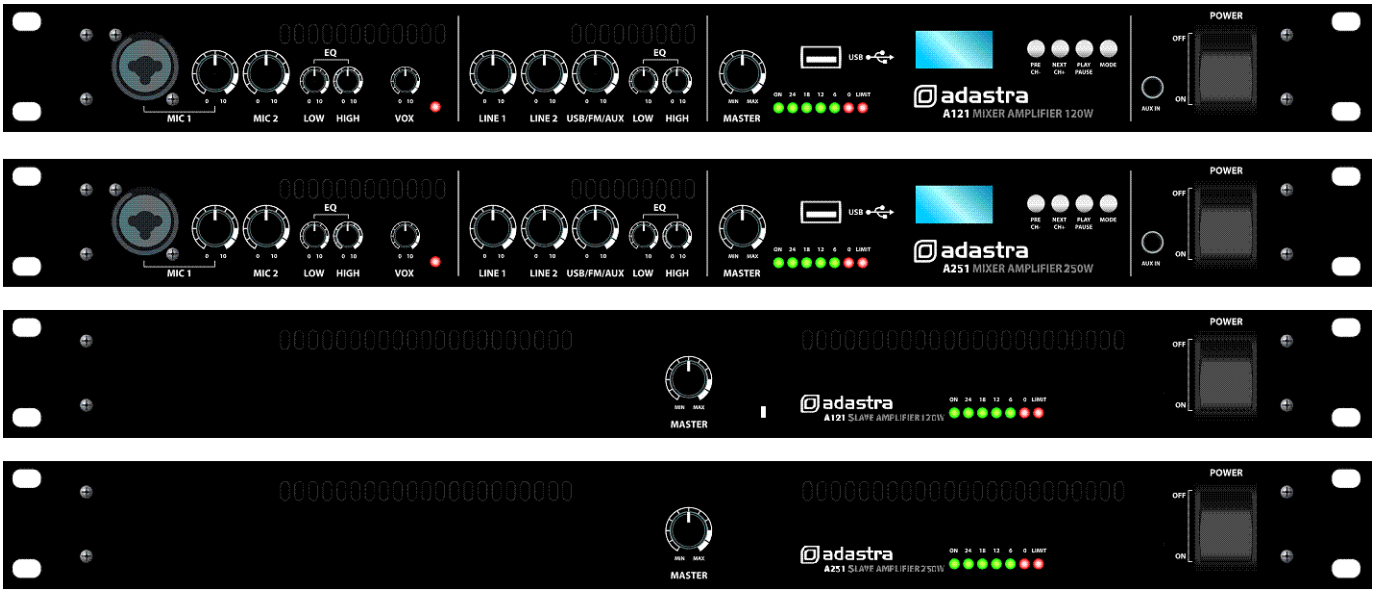
1U Mixer-amps & Slave amps

A121	Mixer-amp + USB/FM	120W	952.904
A251	Mixer-amp + USB/FM	250W	952.906
S121	Slave amp	120W	952.908
S251	Slave amp	250W	952.911

User Manual



Features:

- **2 Mixer-amp models and 2 Slave versions**
- **Transformer coupled output for 100V or 4-16Ω operation**
- **USB/FM audio player on mixer-amp models**
- **Compact 1U rack-mount format**
- **Dual fan-cooled**
- **High efficiency toroidal transformers**
- **32V phantom power for Mic 1 (switchable)**

www.avsl-adastra.com

Introduction:

Thank you for choosing this Adastra 1U amplifier This product has been designed to offer reliable, high quality amplification for various installation and PA applications. In order to gain the best results from this equipment and avoid damage through misuse, please read and follow these instructions and retain for future reference.

Warning:

To prevent the risk of fire or electric shock, do not expose any of the components to rain or moisture.
If liquids are spilled on the surface, stop using immediately, allow unit to dry out and have checked by qualified personnel before further use.

Avoid impact, extreme pressure or heavy vibration to the unit.

There are no user serviceable parts inside the amplifier – refer all servicing to qualified service personnel.

Safety

- Check that the mains lead is in good condition and that the supply voltage selector switch matches the supply voltage.
- Ensure signal leads and speaker cable(s) are in good condition
- Do not use the USB connector as a general purpose power source or charger.
- Do not allow any foreign particles or liquids to enter the amplifier through the cooling vents
- Do not cover or obstruct cooling vents or fan grilles.

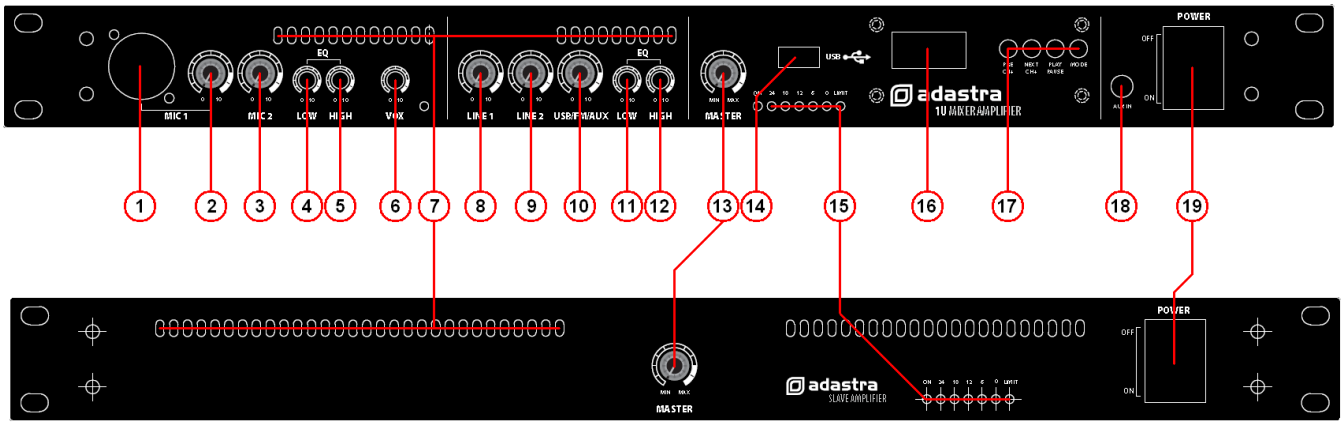
Placement

- Keep out of direct sunlight and away from heat sources.
- Keep away from damp or dusty environments.
- When rack-mounting, secure firmly in place and avoid positioning heavy items directly on top of the unit
- Ensure adequate access to controls and connections and pay attention to cooling air-flow

Cleaning

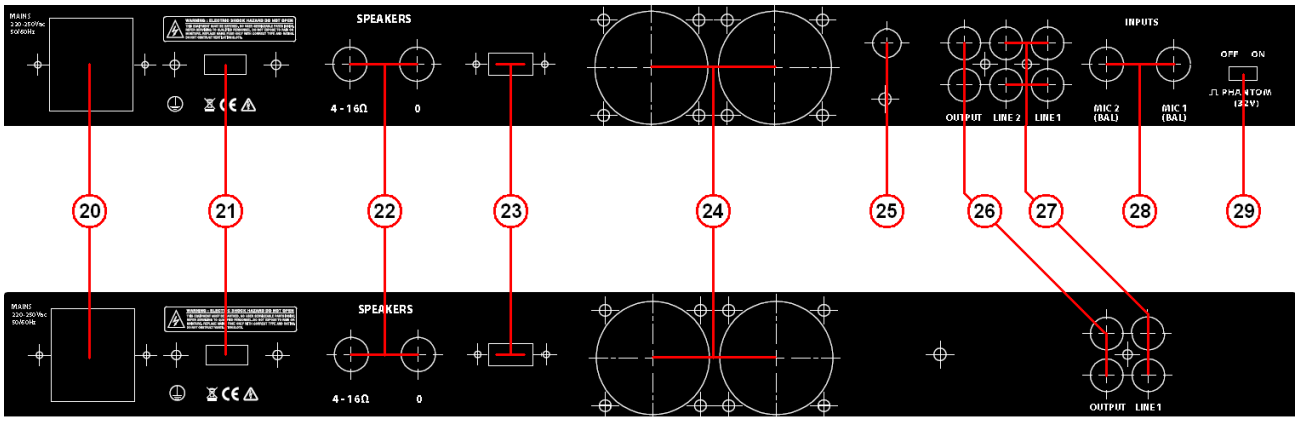
- Use a soft cloth with a neutral detergent to clean the housing as required
- Use a soft brush to clear debris from the cooling vents and connectors
- Do not use strong solvents for cleaning the unit.

Front Panel



1. Combo MIC1 input – Balanced XLR/6.3mm mic. input - channel	11. LOW – Bass EQ control for LINE and USB/FM/AUX channels
2. MIC1 – Volume control for MIC channel 1	12. High – Treble EQ control for LINE and USB/FM/AUX channels
3. MIC2 – Volume control for MIC channel 2	13. MASTER – Main output volume control
4. LOW – Bass EQ control for MIC channels	14. USB input for storage device
5. HIGH – Treble EQ control for MIC channels	15. LED power, level and limit indicators
6. VOX – Auto voice-over control for MIC channels	16. USB/FM display
7. Cooling vents	17. USB/FM transport and mode controls
8. LINE1 – Volume control for Line input 1	18. 3.5mm stereo jack for AUX input (channel 3)
9. LINE2 – Volume control for Line input 2	19. POWER – Mains On/Off switch
10. USB/FM/AUX – Volume control for USB/FM/AUX channel	

Rear Panel



20. IEC mains inlet and integral fuse	25. FM antenna connection
21. Voltage selector 110/240Vac	26. OUTPUT – 2 x RCA line output
22. Mono 6.3mm speaker jack outputs (4-16Ω only)	27. LINE1 + LINE2 – 2 x RCA line inputs
23. 100V speaker output terminals	28. MIC1 + MIC 2 – 2 x balanced 6.3mm jack MIC inputs
24. Cooling Fans	29. Phantom power switch (32V) for MIC1

Connection

The Adastra A-series mixer-amps and S-series slaves can drive EITHER 100V line OR 4-16Ω speakers. Both types of speaker should NOT be connected together to the same amplifier.

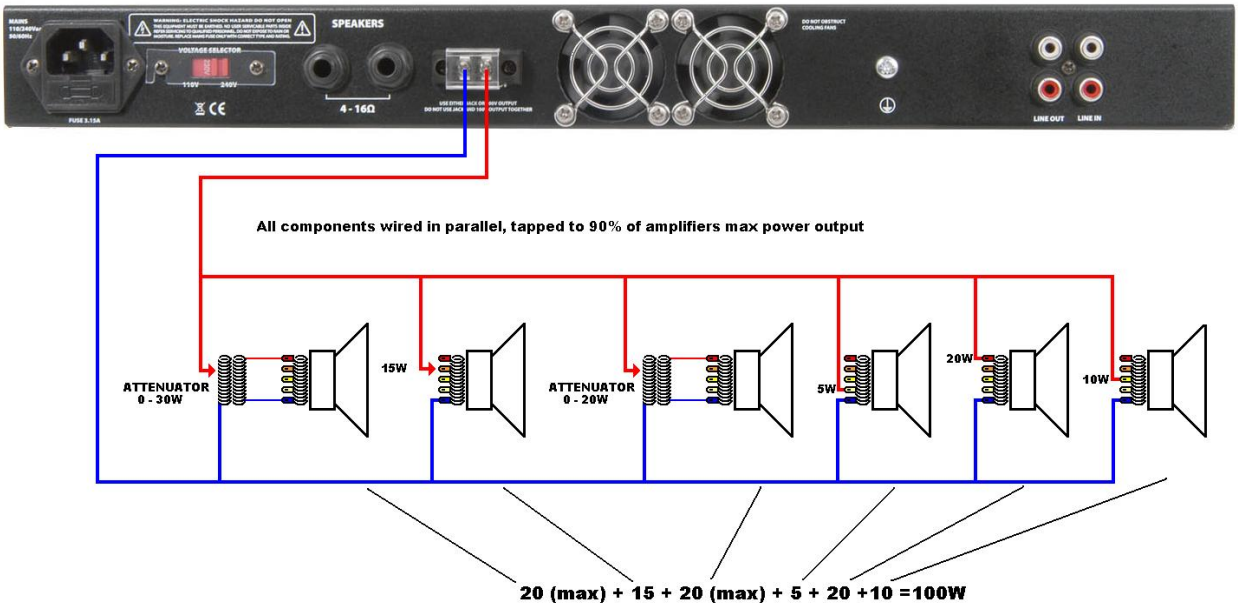
100V Line Speakers

100V line speakers must be connected using the “100V” and “COM” screw terminals (23) on the rear panel. All 100V line wiring should be run with double-insulated cable rated to the max current for the system.

For example, in a 250W system @ 100Vmax, 250W/100V=2.5A, so the speaker cable should be rated to 2.5A minimum

Each speaker must be connected in a parallel chain and the total wattage for all speakers should not exceed 90% of the amplifier’s rated output. Please see the diagram below to show an example arrangement.

100V LINE SYSTEM WIRING



Low Impedance Speakers

If standard low impedance (4Ω, 8Ω or 16Ω) speakers are being used, these should be connected to the 6.3mm output sockets on the rear panel using quality speaker jack leads. Both of these outputs are fed from the same amplifier section, which is mono. The minimum impedance of the total speaker load connected to either or both of these sockets must be no lower than 4Ω.
The impedance is calculated using an inverse calculation as shown below.

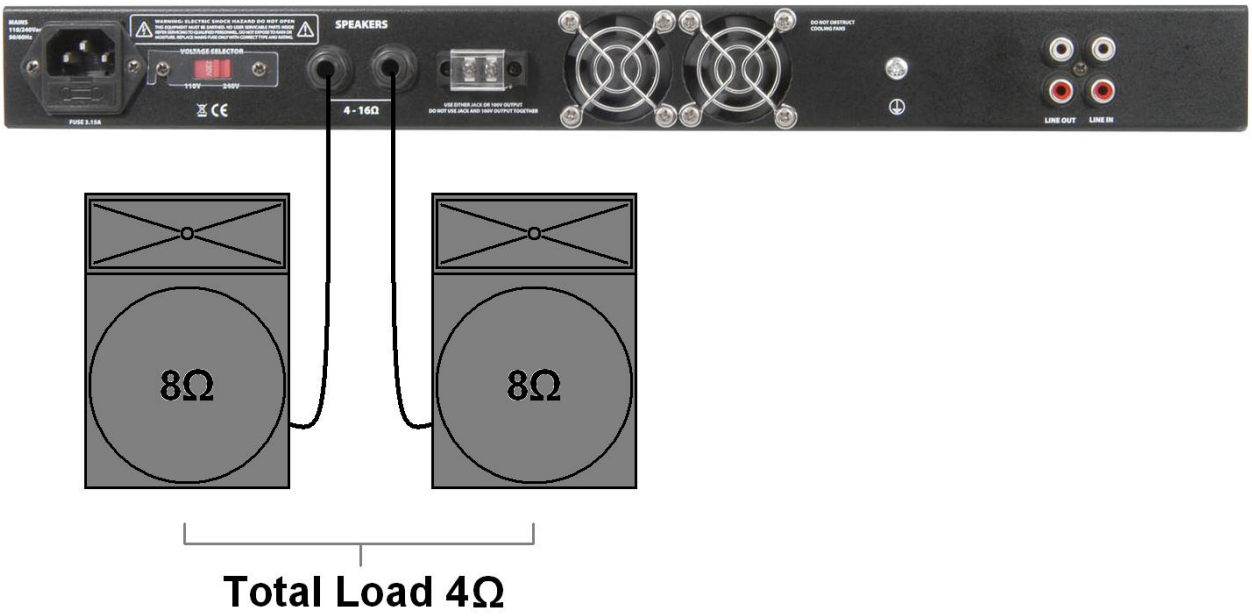
$$\frac{1}{\text{Impedance Speaker 1}} + \frac{1}{\text{Impedance Speaker 2}} = \frac{1}{\text{Overall Impedance}}$$

… therefore, for 2 speakers – each 8Ω impedance…

$$\frac{1}{8\Omega} + \frac{1}{8\Omega} = \frac{1}{4\Omega}$$

… so the overall impedance is 4Ω for both speakers connected in parallel.
The diagram below gives an example of this…

8Ω SPEAKER SYSTEM WIRING



Inputs – Slave amplifiers

The S121 and S251 slave amplifiers accept a LINE IN via 2 x RCA connectors at the rear and the same signal can be sent out to further amplifiers from the LINE OUT pair of RCA connectors. Since the amplifier is mono, all stereo inputs are summed together.

Inputs – Mixer-amplifiers

A microphone can be connected to MIC1 channel by either 6.3mm jack or XLR to the front panel combo input. If required, there is also a 6.3mm jack connection on the rear panel for MIC1 channel. A further microphone can be connected to MIC2 channel via a 6.3mm jack on the rear panel. For microphones which require phantom power, a switch on the rear panel can apply +32V phantom to MIC1 front combo and MIC1 rear jack inputs.
*** ENSURE THAT ONLY TRS JACK PLUGS ARE USED FOR MIC1 WHEN PHANTOM POWER IS SWITCHED IN**

Line inputs (e.g. CD, DVD, mp3 players) can be connected to LINE1 and LINE2 channels via pairs of RCA connectors on the rear panel. Alternatively, for the USB/FM/AUX channel, a stereo 3.5mm socket on the front panel can be used instead – ideal for portable mp3 players etc.

There is also a USB type A connector on the front panel for playback of digital audio files stored on a USB pen.

The overall mix can be connected to further amplifiers via the OUTPUT pair of RCA connectors.

Operation

With all volume levels and VOX control turned down, connect the amplifier to the mains supply (ensure correct supply voltage) using a suitable IEC lead (as supplied) and switch POWER on.

HIGH and LOW EQ controls should be initially set to the vertical “12 o’clock” position.

If microphones are being used, turn up the MASTER control approximately half way and gradually increase MIC1 rotary level control whilst speaking into the microphone until the required volume is reached. Repeat for MIC2 volume control. Adjust HIGH and LOW EQ controls to alter the overall bass and treble response of both microphones as needed.

For any line level devices connected to line input channels, adjust the LINE1 and LINE2 level controls in the same way as for the microphone channels. Overall tone of the line inputs (including the USB/FM/AUX) can be adjusted via the HIGH and LOW controls.

For the USB/FM/AUX channel, pressing MODE toggles between the USB device, FM tuner or AUX input as a sound source. Turning the USB/FM/AUX level control increases the level of the playback through the amplifier For the FM tuner, an initial channel search can be performed by pressing “CH –“ followed by “PLAY/PAUSE” .

The USB/FM/AUX transport controls are as follows…

Control	●	●	●	●
	PRE	**NEXT**	**PLAY**	**MODE**
	CH -	**CH+**	**PAUSE**	
USB	Previous track	Next track	Pause / Play / Track Time	Toggle USB/FM/AUX
FM Tuner	Search down	Search up	Halt search	
AUX	No function			
Press & Hold	Volume down	Volume up	FM channel/frequency USB Pause/Total No. tracks	

The player status is indicated by a small backlit LCD screen to the immediate left of the transport buttons.

For MIC channels priority, increasing the VOX control will cause the level of playback through the LINE or USB/FM/AUX channels will be reduced when speaking into MIC1 or MIC2. Adjust this control to achieve the required amount of “ducking” of the other channels when MIC channels are used.

SPECIFICATIONS				
Model	**A121**	**A251**	**S121**	**S251**
Power supply	Switchable 110/240Vac, 50/60Hz (IEC)			
Output: RMS @ 4Ω	120W	250W	120W	250W
Mic input front	MIC1 combo connector (XLR/jack)		N/A	N/A
Mic inputs rear	MIC1 & MIC2 6.3mm jacks		N/A	N/A
Line input front	AUX stereo mini jack 3.5mm		N/A	N/A
Line inputs rear	LINE1 & LINE2 RCA (pairs)		N/A	N/A
Mic controls	MIC1 & MIC2 Levels, Low/High EQ, VOX		N/A	N/A
Line controls	LINE1, LINE2, USB/FM/AUX Levels, Low/High		N/A	N/A
USB/FM/AUX player controls	Play/pause, PRE (CH -), NEXT (CH +), MODE		N/A	N/A
LED indicators	On, -24/18/12/6/0dB, Limit			
Phantom power	32V switchable (Mic 1)		N/A	
Line output	RCA (L+R) with Master volume control			
Speaker outputs: 4Ω - 16Ω	2 x 6.3mm jack (4 ohms min)			
Speaker outputs: 100V line	Com/100V screw terminals			
Dimensions	483 x 44 x 325mm (1U)			
Weight	7.8kg	8.4kg	7.5kg	8.0kg

Troubleshooting

No power LED on control panel	Ensure IEC lead is in good condition and connected properly
	Ensure mains outlet voltage is same as voltage selector
	Check mains inlet fuse
	Ensure POWER switch is on
Power LED is on but no other LEDs and no output	Check input signals and condition of input connection leads
	Check MASTER, MIC or LINE controls are not turned fully down
	Turn down VOX control
No output from condenser microphone	Ensure Phantom Power is switched on (turn Master down first)
	Check that condenser microphone is not plugged into MIC2
Power light and output LEDs lighting but no output	Check speaker leads are in good condition and connected properly
	Check speakers are working (test on another amp if available)
FM tuner drifts from programme channel	Attach an FM antenna to the F connector on the rear panel
	Switch unit off and then on again (tuning may drift with temperature)
	Press CH- then PLAY/PAUSE to perform channel search + store
USB player will not play audio from media	Press PLAY on transport controls
	Check memory device is connected properly (remove and re-insert)
	Check file types – standard compressed digital audio files required
	Check memory device works on a PC or Mac for standard playback
Output is very loud or LIMIT LED is on constantly	Check level of input signal is not too high
	Reduce channel volume and EQ settings
	Reduce MASTER level until LIMIT light stops flashing
	Ensure Hi-Z line level input(s) not connected via MIC1 or MIC2
Output is working but at very low level	Check input audio source level is not too low
	Increase channel volume and EQ settings if turned down
	Increase MASTER level
	Check for quiet recording of media files on USB
Feedback (loud squealing or howling from mics)	Face microphone away from speakers and monitors
	Reduce channel volume and EQ settings
	Reduce MASTER level
Amplifier is getting very hot	Make sure fans are working properly and not obstructed
	Ensure cooling vents are clear from debris and dust
	Check that 4Ω or 8Ω speakers are not connected to 100V terminals
	Ensure total 100V speaker wattage is not more than amplifier rating
	Ensure that 100V and 4Ω or 8Ω speakers are not both connected
	Ensure that total load across speaker jack outputs is not less than 4Ω

Note: for further troubleshooting, refer equipment to qualified service personnel for testing

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